

QCX
Avro
CF105
R7-0400-34
Iss-12

C-105 MK 2
Production A/C

Report # 7-0400-34
Issue 12

WEIGHT & C.G. SUMMARY

N.E.A.

UNCLASSIFIED

Oct. 1/57

Date: October 1st, 1957
Aircraft: C-100 MK 2
Production A/C
C-105

UNCLASSIFIED

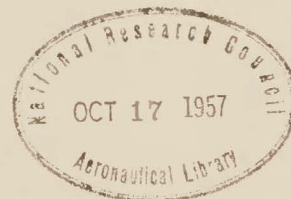
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I N D E X

<u>Sheet #</u>	<u>Content</u>
1-1 to 1-3	Introductory notes and explanation of weight changes.
2-1 to 2-2	Weight & C.G. Summaries.
3-1 to 3-15	I.B.M. Detail Sheets of Weights and C.G.'s.

N. B.

The flight C.G. envelopes for the MK 2 Aircraft have been omitted until such time as a fully approved fuel sequencing is established.



49776

Date: October 1st, 1957
Aircraft: C-105 MK 2
Production A/C

UNCLASSIFIED

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Sheet 1-1

INTRODUCTION & WEIGHT CHANGES

The following is a Weight and C.G. Summary of the C-105 MK 2 Production Aircraft, based on the latest weight estimates available.

All Weight & C. G. changes are relative to issue 11 of September 1st, 1957.

GENERAL:

- a) Orenda PS13 Engines comprise the Power Plant (4,500 lb each excluding Nose Bullet and Input Frame).
- b) A package containing 4 "semi-submerged" Sparrow II Missiles (432 lb each) forms the current armament.
- c) The R.C.A. Radar Astra I System is installed, Weight & C.G. location being to the latest breakdown received from them, dated 3rd July 1957. The Sparrow III Auxiliaries, included in the breakdown, have been deleted, some Avro installed Antennae have been added. The Infra Red Tracker System is allowed for in its proposed location at the Fin Tip (Total Weight = 2,741.0 lb).

In addition to the above the Minnaeopolis-Honeywell MH 64 Damping System is installed.

The early MK 2 Aircraft will have the "Astra Minus" System installed (i.e. Navigational and Communication Equipment only.)

- d) A considerable number of MK 1 parts, assemblies and equipment have now been weighed. Where these weights apply to the MK 2 Aircraft, they have been recorded in the MK 2 records.

On the I.B.M. Sheets in this report, immediately preceeding the item title, will be found a number varying from 0 to 100. This is the percentage actual weight recorded in that report.

N.B. It should be noted that the early MK 2 Aircraft will not be as this summary designates, but will be flight test versions with instrumentation replacing the missile package etc. or for development of Astra I Radar System. etc.

1. STRUCTURE

WEIGHT (lb)

a) Wing:

No Weight Change.

b) Fin & Rudder

No Weight Change.

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INTRODUCTION & WEIGHT CHANGES

1. STRUCTURE

c) Front Fuselage Fwd. Sta. 255"

Cockpit Floor - Production drawing estimates	-	1.51
Windscreen - alterations to MK 2 glare shield and installation hardware	-	0.70
Navigator's Canopy - MK 2 canopy with larger window will be heavier than MK 1 Aircraft	+	10.00
Bulkhead Sta. 255" - many minor design changes	+	3.13
Canopy Arches - production drawing estimates simplification of rear arch design.	-	3.02

Weight Increase Front Fuselage + 7.90

d) Centre Fuselage Sta. 255"-485"

No Weight Change.

e) Duct Bay Sta. 485" - 591.65"

Drop Tank Mounting - production drawing estimates	+	2.80
Longerons D.B. - hardware changes for MK 2 Aircraft	-	0.60
some duplication at Joint Sta. 485"	-	6.56
Skins D.B. - hardware changes, diaphs. for shroud pick-ups etc.	+	2.55
Dive Brake Accommodations - redesign refuel and limiter panel.	+	0.34
Longitudinal Beams - alterations to jack beams and jack support brackets	+	0.47
Access Panels D.B. - Production drawing estimates Front Engine mounting door deleted	-	6.07
Floating Duct D.B. - alteration to cross section area of seal ring, .064 plate added etc.	+	16.15

Duct Bay Weight Increase + 9.08

f) Engine Bay Sta. 591.65"-742.5"

Light Formers E.B. - production drawing estimates some parts of engine rail attach. now called up with formers	+	6.71
Heavy Formers E.B. - production drawing estimates	+	6.44
Intermediate Formers E.B. - production drawing estimates	-	2.67
Engine Rails & Attach - some attach. brackets with formers	-	7.70
Lower Longeron E.B. - production drawing estimates	+	0.14

Weight Increase Engine Bay + 2.92

g) Rear Fuselage Sta. 742.5 Aft.

No Weight Change.

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INTRODUCTION AND WEIGHT CHANGES

<u>1. STRUCTURE</u>	<u>WEIGHT (lb)</u>
h) <u>Fuselage "Marry-up"</u>	
No Weight Change	
<u>TOTAL STRUCTURAL INCREASE</u>	<u>+ 19.90</u>
<u>2. LANDING GEAR</u>	
No Weight Change.	
<u>3. POWER PLANT & SERVICES</u>	
No Weight Change	
<u>4. FLYING CONTROLS GROUP</u>	
Hydraulic Flying Control I/Wing - Actual Weight of elevator actuator assy. as in MK 1 Aircraft	+ 16.66
Hydraulic Flying Control O/Wing - Actual Weight of aileron actuator assy.	= 6.30
<u>TOTAL FLYING CONTROLS INCREASE</u>	<u>+ 10.36</u>
<u>5. EQUIPMENT GROUP</u>	
Low Pressure Pneumatics - rerouting of piping, alterations to fin pitot heads etc.	+ 1.24
Utility Hydraulics Duct Bay - addition of surge damping accum. some equipment actual weights	+ 3.70
Preliminary estimates of other MK 2 A/C changes, rerouting piping etc.	+ 1.55
Utility Hydraulics C.F. - Actual weights equipment as in MK 1 Aircraft.	+ 9.31
Radar Removable - AIC 10A Interphone replace AIC 10 causing deletion of dynamotor	+ 1.10
I.R. Tracker located at Fin Tip	= 4.50
Brake Parachute - Actual Weight quoted by Irving - previously manufacturer's estimate was recorded	+ 28.40
<u>TOTAL EQUIPMENT INCREASE</u>	<u>+ 40.80</u>

SUMMARY

Weight Change - Aircraft Basic Weight	
Structure	+ 19.90 lb
Flying Controls	+ 10.36 lb
Equipment	+ 40.80 lb
	<u>+ 71.06 lb</u>

Weight Change - Operational Weight Empty (A/C less fuel)

<u>Issue 11</u>	<u>Issue 12</u>	
<u>45,090.00 lb</u>	<u>45,161.06 lb</u>	<u>= + 71.06 lb</u>

Date: October 1st, 1957
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WEIGHT & C.G. SUMMARY

DESCRIPTION	WEIGHT lb	H. ARM ins.	V. ARM ins.
STRUCTURE	18,896.11	564.39	137.41
Wing	10,003.73	642.74	142.23
Fin & Rudder	1,024.00	754.25	209.28
Fuselage: fwd. Sta. 255"	2,573.76	182.68	128.47
Sta. 255"-485"	1,690.10	374.96	130.07
Sta. 485"-591.65"	1,119.27	538.29	105.42
Sta. 591.65"-742.5"	1,550.20	661.04	110.51
Sta. 742.5 Aft.	882.72	801.05	129.40
"Marry-Up"	52.33	467.60	103.84
UNDERCARRIAGE - RETRACTED	2,551.77	487.22	134.79
Main Undercarriage	1,901.62	539.31	141.00
Main U/C Doors & Fairings	291.80	537.10	138.40
Nose Undercarriage	333.81	170.80	99.70
Nose U/C Door & Fairing	24.54	162.24	88.23
POWER PLANT & SERVICES	10,800.67	671.41	121.32
Engines & Accessories PS 13	9,186.78	687.95	121.16
Gear Box & Drive on Fuselage	281.84	601.70	102.49
Engine Controls	32.43	375.76	118.61
Gear Box, Starter & Drives on Engine	315.45	615.98	105.24
Engine Nose Bullet (Orenda Supplied)	70.00	587.17	116.00
Fire Extinguishing System	65.46	700.45	134.21
Engine Mountings	132.38	666.82	136.52
Fuel System	716.33	530.91	134.48
FLYING CONTROLS GROUP	1,791.00	685.52	140.59
Mechanical Flying Controls	946.48	687.84	148.61
Hydraulic Flying Controls	844.52	682.91	131.61
EQUIPMENT FIXED & REMOVABLE	8,270.75	336.93	114.21
Instruments	46.07	163.68	138.70
Probe	15.00	38.14	108.00
Cockpit Pressure Sealing	5.00	186.00	130.00
Oxygen System	23.59	253.72	156.43
Ejector Seats	284.42	202.80	136.25
Air Conditioning System	856.00	333.49	134.98
Hydraulic Main System	638.81	504.18	117.70
Cabin Insulation	14.31	187.48	132.00
Brake Parachute	90.78	786.64	143.16
Electrical System	1,259.16	432.22	112.68
Low Pressure Pneumatics	56.94	421.96	128.47
Surface Finish	100.00	591.52	140.20
Intake De-icing Boots	51.84	197.02	118.00
Radome Anti-icing	8.88	51.49	125.00
Canopy Actuation	64.92	221.99	154.35
Cabin Consoles	17.45	174.76	124.34
Radar Door Actuation	10.00	268.00	95.00
MH 64 Damping System	139.13	449.26	135.57
Radio & Radar Removable	1,907.50	205.72	111.19
Radio & Radar Fixed	631.00	233.27	115.71
		continued.	

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WEIGHT & C.G. SUMMARY:

DESCRIPTION		WEIGHT lb	H. ARM ins.	V. ARM ins.	M.A.C. %
<u>Equipment (Fixed & Removable)(Cont'd.)</u>					
Sparrow Pack Structure		870.70	389.60	96.00	
Sparrow Pack Mechanisms		582.57	379.30	99.04	
Sparrow Pack Hydraulics		331.94	373.52	99.00	
Sparrow Pack Electronics		198.00	327.96	100.00	
Sparrow Pack Electrics		64.10	362.29	95.00	
Sparrow Pack Air Conditioning		2.64	309.93	104.15	
AIRCRAFT BASIC WEIGHT		42,310.30	547.72	128.74	
USEFUL LOAD (less fuel)		2,850.76	372.91	105.43	
Crew		430.00	194.00	136.50	
Oil		138.97	636.92	110.57	
Alcohol		22.00	93.00	138.00	
Engine Fire Extinguishing Fluid		25.00	730.00	129.00	
Residual-Fuel		218.40	553.98	134.04	
Missiles		1,728.00	389.29	88.30	
Oxygen Charge		13.39	259.68	159.91	
Water for Air Conditioning		275.00	268.00	131.75	
Operational Weight Empty	U/C Up	45,161.06	536.69	127.27	27.82
	U/C Down		538.81	123.77	28.40
Operational Weight Empty	U/C Up	43,433.06	542.55	128.82	29.43
Less Missiles	U/C Down		544.75	125.18	30.04
Normal Combat Mission Fuel * (2,044 gals. @ 7.8 lb/gal)		15,940.00	542.03	142.30	
Normal Combat Weight	U/C Up	61,101.06	538.08	131.19	28.20
	U/C Down		539.65	128.60	28.63
Half Combat Mission Fuel * (1,022 gals. @ 7.8 lb/gal)		7,970.00	543.18	139.55	
Combat Weight (half mission fuel)	U/C Up	53,131.06	537.66	129.11	28.09
	U/C Down		539.46	126.14	28.58
Maximum Internal Fuel (2,492 gals. @ 7.8 lb/gal)		19,438.00	541.85	144.16	
A.U.W. Maximum Internal Fuel	U/C Up	64,599.06	538.24	132.35	28.25
	U/C Down		539.72	129.91	28.65
Maximum External Fuel (500 gal. @ 7.8 lb/gal + Drop Tank)		4,248.00	521.84	60.67	
A.U.W. Maximum Internal and External Fuel	U/C Up	68,847.06	537.23	127.93	27.97
	U/C Down		538.62	125.64	28.35

N.B. 1) * New figures are being prepared by Aerodynamics for Mission Fuel in accordance with latest PS 13 date, but these are not yet available. Fuel C.G.'s used here are as if proportioners were installed - until a fuel sequencing can be established, these will be recorded for partial fuel cases.

2) Aircraft Datum = 120" above an arbitrarily chosen ground line.

AVRO AIRCRAFT LTD.

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WEIGHT AND C. OF G BY FUNCTIONAL COMPONENTS

PROJECT C-105 MK 2 Production Aircraft.

DESCRIPTION		REFERENCE NO.	COMP. NO.	WEIGHT	
TOTAL WING GROUP		1000000			
OUTER WING		1010000			
100	OUTER WING SKINS	1010001	64	92910	70
100	POSTS AND INTERCOSTALS	1010002	64	2436	71
100	OUTER WING SPARS	1010003	64	39258	70
100	OUTER WING RIBS	1010004	64	13456	69
18	AILERON CONTROL BOX	1010006	64	37920	71
100	RIB 12	1010007	64	7626	64
100	0 W AILERON JACK FITTING	1010009	64	1046	72
	AILERON JOINTS AND FAIRING	1010010		3293	78
				197945	
AILERON		1020000			
100	AILERON STRUCTURE	1020001	74	33600	79
				33600	
ELEVATOR MARRY UP		1030000		1597	71
97	ELEVATOR	1030000	82	44900	75
				46497	
INNER WING		1040000			
79	MAIN U C STRUCTURE	1040001	62	33071	57
27	FRONT SPAR I W	1040002	62	11110	48
27	MAIN SPAR I W	1040003	62	14639	56
27	FWD CENTRE SPAR I W	1040004	62	4245	60
27	AFT CENTRE SPAR I W	1040005	62	3386	65
27	REAR SPAR	1040006	62	7667	70
32	I W STRUCTURE F S TO M S	1040007	62	105918	49
	I W STRUCTURE M S TO R S	1040008	62	14979	60
	STRUCTURE AFT OF REAR SPAR	1040009	62	31639	72
11	ELEVATOR CONTROL BOX I W	1040010	62	4271	72
25	TRANSP JOINT MARRY UP	1040011		7065	61
74	CENTRE LINE JOINTS	1040012	62	5864	36
	INNER WING SKINS	1040013	62	22420	46
	STRUT PICK UP FITTINGS	1040014	62	11818	61
31	RIBS 1 TO 9 INNER WING	1040016	62	5120	46
	DORSAL FAIRING	1040017	62	9548	
100	RIB 10	1040018	62	10800	61
	FUSELAGE HINGE JOINT I W	1040019	62	13812	62
25	TRANSP JOINT	1040020	62	12942	63
	FUSELAGE HINGE JOINT	1040021		3740	52
	DORSAL FAIRINGS I W	1040023		5629	57
				669323	

WEIGHT AND C. OF G BY FUNCTIONAL COMPONE

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WEIGHT AND C. OF G BY FUNCTIONAL COMPONENT

PROJECT _____

	DESCRIPTION	REFERENCE NO.	COMP. NO.	WEIGHT
	TOTAL FUSELAGE GROUP	3000000		
	FUSELAGE BASIC STRUCTURE	3010000		
	RADOME	3010000151		17815
	RADAR NOSE STRUCTURE	3010000351		17444
	SKIN F F	3010000452		80941
	SKIN C F	3010000554		220433
	SKIN D B	3010000656		61355
	SKIN E B	3010000758		164896
4	FORMERS F F	3010001152		105311
	FORMERS C F	3010001254		287493
6	FORMERS D B	3010001356		73315
8	LIGHT FORMERS E B	3010001458		110416
8	HEAVY FORMERS E B	3010001558		198586
	LOWER LONGERONS F F	3010001652		68461
	INNER LONGERON E B	3010001758		71846
	BOTTOM LONGERONS E B	3010001858		69196
	TOP LONGERONS E B	3010001958		6386
	LOWER SHEAR PANEL	3010002052		29882
	TOP WING LONGERONS D B	3010002156		4985
	LONGERONS C F	3010002252		532
	LONGERONS C F	3010002354		138134
	LONGERONS F D B	3010002454		12584
	LONGERONS A D B	3010002556		85955
	ELECTRONICS BAY STRUCTURE	3010002654		45232
32	LONGITUDINAL BEAMS D B	3010002756		66175
	RADAR ACCESS DOOR C F	3010002854		21082
72	MAIN FRAME AT STN 538 77	3010002956		59805
	DIVE BRAKE ACCOMMODATIONS	3010003056		36685
20	TOP LONGERONS F F	3010003152		185711
	DUCT C F	3010003254		315523
	FLOATING DUCT D B	3010003356		432155
23	CANOPY ARCHES	3010003452		82332
	ACCESS PANELS	3010003656		32585
66	NOSE U C SUPPORT STRUCTURE	3010003752		33432
3	CREW BULKHEADS	3010003852		122722
	EQUIPMENT BAY STRUCTURE	3010003954		71112
59	WINDSCREEN	3010004152		129331
	SERV ACCESS DOORS AND PNLS	3010004258		59296
	DORSAL FAIRING FWD	3010004454		27272
	INTERMEDIATE FORMERS	3010004558		46067
	ENGINE ACCESS DOORS E B	3010004658		107356
	SEALING MISSILE BAY	3010004754		6973
	MISCELLANEOUS ITEMS C F	3010004854		3923
	ARMAMENT BAY ROOF	3010004954		125223
	BULKHEAD AT STA 120	3010005052		30601
	BULKHEAD AT STA 255	3010005152		107422
	BULKHEAD STA 485	3010005254		123514
	ENGINE TUNNEL E B	3010005458		613186
	FUSELAGE FUEL TANK	3010005554		209603
	COCKPIT FLOOR	3010005652		55921

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WEIGHT AND C. OF G BY FUNCTIONAL
COMPONENT

PROJECT _____

DESCRIPTION	REFERENCE NO.	COMP. NO.	WEIGHT	H
DORSAL OVER FUEL TANK	301006154		509741	
DEFLECTOR SHIELD	301006254		200033	
SHEAR PANEL BELOW NAV ARCH	301006352		207425	
PACK MOUNTING STRUCTURE	301006454		236522	
ENG ACCESS DOORS FIXED R F	301006559		932677	
TUNNEL FIXED R F	301006659		1207277	
SKIN AND INTERCOSTAL R F	301006759		525677	
FAIRING UNDER RUDDER R F	301006859		263878	
FORMERS FIXED R F	301006959		1068178	
LONGERONS C BEAM FIXED R F	301007059		269077	
REMOVABLE NACELLES R F	301007159		3481582	
CNTR STRUC STING REMOV R F	301007259		1079483	
MISC ITEMS STRUCTURE E B	301007358		91266	
MTG BRKTS SIDE PANEL D B	301007556		21352	
FORMERS LOWER PANEL D B	301007656		741654	
LOWER PANEL D B	301007756		505455	
JOINT F F TO C F	3010078		85525	
JOINT AIR INTAKES TO F F	3010079		95222	
JOINT C F TO D B	3010080		50048	
JOINT D B TO E B	3010081		250858	
FUS JOINT AT STA 742 50	3010082		41874	
DROP TANK MTG STRUCT D B	301008356		113358	
STRUCT AT ENG ACCESS DOORS	301008558		653764	
MISC STRUCTURE F F	301008652		55218	
ENG RAILS ATTACHM TO FORM	301008758		285468	
			659049	
96 DIVE BRAKES	302000072		1115050	
96 DIVE BRAKES C A	30200001		40648	
			11556	
AIR INTAKES	3030000			
AIR INTAKES	303010055		7550221	
			75502	
PILOTS AND NAVIG CANOPIES	3040000			
76 PILOTS CANOPY	304010053		2408117	
			24081	
NAVIGATORS CANOPY	304020053		1665023	
			16650	

WEIGHT AND C. OF G BY FUNCTIONAL
COMPON

PROJECT _____

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WEIGHT AND C. OF G BY FUNCTIONAL COMPONENT

PROJECT _____

DESCRIPTION	REFERENCE NO.	COMP. NO.	WEIGHT	H.
ENGINE GROUP	5000000			
PS 13 ENGINES	5010000		917228	68
			917228	
PS 13 ENGINES SERV ACCESS	5010100		1450	63
			1450	
ACC GEAR BOX ON FUS D B	5020001	56	4524	57
ACC GEAR BOX ON FUS E B	5020002	58	2366	60
			2818	4
ENGINE CONTROLS	5030000			
ENGINE CONTROLS F F	5030001	52	1458	16
ENGINE CONTROLS C F	5030002	54	264	30
ENGINE CONTROLS D B	5030003	56	508	49
ENGINE CONTROLS E B	5030004	58	1013	63
			324	3
STARTER AND ENG GEAR BOX	5040000		3154	561
			3154	5
ENGINE ANTI ICING	5050000		7000	58
			7000	
FIRE EXT SYSTEM	5060000			
55 ENG FIRE EXT SYSTEM ENG	5060001	58	6400	70
55 ENG FIRE EXT SYSTEM D B	5060002	56	1465	55
			6546	
ENGINE MTGS AND BRACKETS	5070000			
ENGINE MOUNTS	5070001		842	167
ENGINE MTG ACCESSORIES	5070002		4817	64
			1323	8
FUEL SYSTEM	5080000			

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COMPONE

PROJECT _____

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WEIGHT AND C. OF G BY FUNCTIONAL COMPONENTS

PROJECT.

DESCRIPTION		REFERENCE NO.	COMP. NO.	WEIGHT
FLYING CONTROLS GROUP		60000000		
MECHANICAL CONTROLS		60100000		
	MECHANICAL CONTROLS F F	6010000152		87591
	MECHANICAL CONTROLS C F	6010000254		8853
	MECHANICAL CONTROLS D B	6010000356		3504
	MECHANICAL CONTROLS FIN	6010000583		126887
11	MECHANICAL CONTROLS I W	6010000662		408847
	MECHANICAL CONTROLS O W	6010000764		304367
	MECHANICAL CONTROLS C A	60100008		6467
				94648
FLYING CONTROLS HYDRAULICS		60200000		
	FLYING CONT HYDRAULICS D B	6020000156		23325
37	FLYING CONT HYDRAULICS E B	6020000258		390766
	FLYING CONT HYDRAULICS R F	6020000359		487
80	HYDRAULICS FLYING CONT I W	6020000462		261147
75	HYDRAULICS FLYING CONT O W	6020000564		115517
61	FLYING CONT HYDRAULICS FIN	6020000683		53317
				84452

AVRO AIRCRAFT LTD.
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WEIGHT AND C. OF G BY FUNCTIONAL
COMPONENT

PROJECT _____

DESCRIPTION		REFERENCE NO.	COMP. NO.	WEIGHT	
FIXED EQUIPMENT GROUP		7000000			
INSTRUMENTS		7010000			
INSTRUMENTS		7010001	52	4407	10
NAVIG TABLE AND STOWAGE		7010004	52	2002	22
				4607	
COCKPIT PRESSURE SEALING		7020000	52	500	18
				500	
OXYGEN SYSTEM		7030000			
OXYGEN SYSTEM		7030001	52	2359	25
				2359	
AIR CONDITIONING SYSTEM		7040000			
AIRCONDITIONING SYST F F		7040001	52	1232	122
AIRCONDITIONING SYST C F		7040002	54	5752	329
AIRCONDITIONING SYST D B		7040003	56	2074	51
AIRCONDITIONING SYST C A		7040005		1236	56
AIRCONDITIONING SYST ENG		7040006		1255	67
AIRCONDITIONING SYST I W		7040007	62	6151	
				85600	
HYDRAULICS MAIN SYSTEM		7050000			
14	UTILITY HYDRAULICS F F	7050001	52	8415	20
31	UTILITY HYDRAULICS C F	7050002	54	4272	43
20	UTILITY HYDRAULICS D B	7050003	56	2733	85
21	UTILITY HYDRAULICS E B	7050004	58	7240	60
23	UTILITY HYDRAULICS I W	7050005	62	1331	15
14	UTILITY HYDR NOSE U C	7050006	91	325	19
23	UTILITY HYDR MAIN U C	7050007	92	2980	54
				6388	1
CABIN INSULATION		7070000	52	1431	18
				1431	
BRAKE PARACHUTE		7080000			
BRAKE PARACHUTE F F		7080001	52	455	16
BRAKE PARACHUTE R F		7080005	59	8499	82

AVRO AIRCRAFT LTD.
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WEIGHT AND C. OF G BY FUNCTIONAL
COMPONENT

PROJECT _____

DESCRIPTION		REFERENCE NO.	COMP. NO.	WEIGHT
BRAKE PARACHUTE I W		708000662		1246
				9078
ELECTRICAL SYSTEM		7090000		
ELECTRICAL WIRING		7091400		
ELECTRICAL WIRING R N		709140151		129
ELECTRICAL WIRING F F		709140252		29661
ELECTRICAL WIRING C F		709140354		23543
ELECTRICAL WIRING A I		709140455		12742
ELECTRICAL WIRING D B		709140556		90155
ELECTRICAL WIRING E B		709140658		645
ELECTRICAL WIRING I W		709140862		89095
ELECTRICAL WIRING FIN		709140983		3527
ELECTRICAL WIRING N U C		709141091		3301
60 ELECTRICAL WIRING ENG		7091411		20026
ELECTRICAL WIRING C A		7091412		137463
				41141
30 ELECTRICS F F		709150052		152481
				15248
ELECTRICS C F		709160054		87094
				8709
ELECTRICS E B		709170058		6706
ELECTRICS ENG		7091701		176325
ELECTRICS C A		7091702		7186
				19020
ELECTRICS FIN		709180083		838
				83
ELECTRICS I W		709190062		23366
ELECTRICS C A		7091901		1126
ELECTRICS M U C		709190292		745
				2522
ELECTRICS A I		709200055		50902
				5090
ELECTRICS D B		709210056		300895
				30089

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PROJECT _____

	DESCRIPTION	REFERENCE NO.	COMP. NO.	WEIGHT	H.
	WINDSCREEN DEMISTING	7092200	52	3564	198
				3564	
	ELECTRICS R F	7092300	59	1368	02
				136	
	SPARROW ELECTRICS F F	7092401	52	254	182
	SPARROW ELECTRICS C F	7092402	54	602	71
				314	
	L P PNEUMATICS	7100000			
24	L P PNEUMATICS F F	7100001	52	2255	192
18	L P PNEUMATICS C F	7100002	54	671	33
	L P PNEUMATICS D B	7100003	56	418	55
	L P PNEUMATICS E B	7100004	58	1526	65
	L P PNEUMATICS F IN	7100005	83	640	75
	L P PNEUMATICS R N	7100006	51	124	7
	L P PNEUMATICS A P	7100007	94	602	9
				5694	
	INTAKE DEICING	7120000	55	5184	19
				5184	
	RADOME ANTI ICING	7130000	51	888	5
				888	
	RADIO AND RADAR FIXED	7140000			
	RADIO AND RADAR FIXED R N	7140001	51	16500	9
	RADIO AND RADAR FIXED F F	7140002	52	5000	18
	RADIO AND RADAR C F	7140003	54	19000	26
	RADIO AND RADAR FIXED D B	7140004	56	1800	51
	RADIO AND RADAR FIXED F IN	7140005	83	3200	76
	RADIO AND RADAR FIXED C A	7140006		17600	21
				63100	
29	CANOPY ACTUATION	7160000	52	6492	22
				6492	
	CABIN CONSOLES	7170000	52	1745	17
				1745	

WEIGHT AND C. OF G BY FUNCTIONAL COMPONENT

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PROJECT _____

DESCRIPTION	REFERENCE NO.	COMP. NO.	WEIGHT	H.
REMOVABLE EQUIPMENT GROUP	80000000			
EJECTOR SEATS	801010052		2844220	
			28442	
RADAR REMOVABLE	8020100			
RADIO AND RADAR REM R N	802010151		96070	9
RADIO AND RADAR REM F F	802010252		19910	18
RADIO AND RADAR REM C F	802010354		58020	27
RADIO AND RADAR REM D B	802010456		57505	1
RADIO AND RADAR REM F IN	802010583		70008	5
RADIO AND RADAR REM C A	8020106		40005	5
			190750	
DAMPING SYSTEM	8030000			
DAMPING SYSTEM F F	803010152		63516	
DAMPING SYSTEM C F	803010254		21803	1
DAMPING SYSTEM E B	803010358		36963	
DAMPING SYSTEM I W	803010462		58005	2
DAMPING SYSTEM O W	803010564		9574	
DAMPING SYSTEM R N	803010651		520	8
DAMPING SYSTEM C A	8030107		43144	8
			13913	
SPARROW PACK	8050000			
SPARROW PACK STRUCTURE	805010094		87070	38
			87070	
SPARROW PACK MECHANISMS	805020094		58257	37
			58257	
SPARROW PACK HYDRAULICS	805030094		33194	37
			33194	
SPARROW PACK ELECTRONICS	805040094		19800	37
			19800	

EIGHT AND C. OF G BY FUNCTIONAL GROUP COMPONENT

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	REFERENCE NO.	COMP. NO.	WEIGHT	H. ARM	V. ARM	H. MOMENT	V. MOMENT
GROUP	80000000						
	801010052		28442	20280	13625	5768038	3875223
			28442			5768038	3875223
	8020100						
N	802010151		96070	9052	10100	8696256	9703070
F	802010252		19910	18534	12000	3690119	2389200
F	802010354		58020	27125	10122	15737925	5872784
B	802010456		5750	51388	10000	2954810	5750000
IN	802010583		7000	85000	29000	5950000	2030000
A	8020106		4000	55298	16000	2211920	6400000
			190750			39241030	21210054
	80300000						
	803010152		635	16959	11961	107690	75952
	803010254		2180	31915	11403	695747	248585
	803010358		369	63242	13432	233363	49564
	803010462		5800	52121	16000	3023018	928000
	803010564		957	4855	14000	71112	13300
	803010651		520	8000	10200	41600	53040
	8030107		431	4481	6812000	2077968	517680
			13913			6250498	1886121
	80500000						
	805010094		87070	38960	9600	33922472	8358720
			87070			33922472	8358720
MS	805020094		58257	37930	9904	22096880	5769773
			58257			22096880	5769773
CS	805030094		33194	37352	9900	12398623	3286206
			33194			12398623	3286206
ICS	805040094		19800	32796	10000	6493608	1980000
			19800			6493608	1980000

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PROJECT_____

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WEIGHT AND C. OF G BY FUNCTIONAL COMPONENT

PROJECT _____

DESCRIPTION	REFERENCE NO.	COMP. NO.	WEIGHT	H.
OPERATIONAL LOAD	9000000			
CREW MEMBERS	9010000	52	43000	19
			43000	
ENGINE OIL	9020000			
ENGINE OIL DRAINABLE	9020001		9290	65
ENGINE OIL TRAPPED ENG	9020002		1773	63
ENGINE OIL TRAPPED D B	9020003	56	1925	58
ENGINE OIL TRAPPED E B	9020004	58	9095	9
			1389	7
SPARROW MISSILES	9030000	54	17280	038
			17280	0
OXYGEN CHARGE	9040000			
OXYGEN CHARGE F F	9040001	52	7220	
OXYGEN CHARGE C F	9040002	54	12672	6
			1339	
ALCOHOL FOR RADOME DEICING	9050000	51	2200	9
			2200	
ENGINE FIRE EXT FLUID	9060000		2500	73
			2500	
RESIDUAL FUEL	9070000			
RESIDUAL FUEL C F	9070001	54	4680	39
RESIDUAL FUEL I W	9070002	62	17160	59
			21840	
WATER FOR AIR CONDITIONING	9100000	54	26000	26
UNUSABLE WATER FOR AIRCOND	9100001	54	1500	26
			27500	

